



More CSPro, less IMPS/ISSA

The new combined IMPS/ISSA software product has a name! Thanks to everyone who submitted suggestions. We had dozens to choose from. It was an especially difficult choice because there was no single name on which everyone could agree. Several intense meetings were needed to make a selection from the list of finalists. The final decision was ... "Census and Survey Processing" software or **CSPro**, for short.

The CSPro software development team, consisting of programmers from IPC, Macro International, and Serpro, S.A. (the developers of ISSA), completed the first beta version in time for the IPC "IMPS Workshop" held in September, where it was unveiled for the first time. The workshop participants spent two days experimenting with CSPro. The participants completed a series of class exercises for data entry and cross-tabulation applications which included defining data dictionaries. The CSPro developers were on hand to observe the class using the software and to answer questions. Those using the software for the first time also provided valuable comments and suggestions directly to the developers.

CSPro, which combines the computational power of ISSA with the user-friendly features of IMPS, has a state-of-the-art integrated Windows look and feel. IMPS users will recognize the basic concepts of the data dictionary, data entry forms design, cross-tabulation, and mapping, while ISSA users will recognize the command language.



CSPro Development Team and Beta Testers

The first release will allow the user to:

- Define data dictionaries
- Design and run data entry applications with field-level consistency checks and skips
- Design and run batch applications for editing and imputation
- Run cross-tabulations from a new drag-and-drop interface
- Create thematic maps just as in IMPS 4.1 Map Viewer
- Sort data files
- Work with several dictionaries and applications at the same time.

Mark February 29, 2000, on your calendar; IPC has set this as the release date for CSPro. Between now and then, the development team

will work to implement some of the suggestions from the participants. IPC welcomes anyone who would like to participate in the development of the software as CSPro beta tester. For more information, send your e-mail request to cspro@census.gov.

CDS - Release 1.0

IPC has announced the initial release of the much anticipated Census Design System (CDS). For those unfamiliar with CDS, it is a PC-based application intended to assist with the planning and production of materials for a population and housing census. This release has significant improvements over the beta version, including a simpler format to enter relevant parameters. Many other user interfaces have been modified at the suggestion of our beta testers. Release 1.0 includes:

- A Help system for problem solving, with a step-by-step tutorial
- A "Glossary of Census Terms" for definitions
- Specification of local parameters for manuals and forms (e.g., names and phone numbers)
- A listing of recommended census tabulations, including the purpose of each table
- The ability to view a table shell (layout)
- A list of topics related to each table (e.g., sex, age, education, etc.)
- Selection of specific tables to be included in census publications
- The identification of information to be collected in the census based on the tables selected
- At least one form of question wording for each topic
- A choice, for certain topics, of alternate question wordings
- Generation of an enumerator's manual and a questionnaire reference book
- Generation of a data dictionary for use with the CSPro software
- English-language capability (although French- and Spanish-language versions are planned)

To run CDS on your machine, you will need **Windows 95 or 98**; **80 MB** of available disk space on a hard drive; and **16 MB of memory**. We strongly recommend at least **32 MB of memory**. In addition, you will need **Microsoft Internet Explorer™ 4.0** (or better) and **Microsoft Office 97™**. To order a copy of the CDS software, you may contact us via e-mail at: cds@census.gov.

In related news, the CDS development team welcomed Geoffrey Greenwell aboard in July. Since his arrival, he has been concentrating on the revision of the system interfaces. Geoff previously worked as an engineer in Venezuela and Trinidad. His experience includes data base development and system design. Fluent in Spanish, French, and German, he was a Peace Corps volunteer in Zaire (as it was then called). Geoff was not alone as a new member of the CDS team. Jesse Markham, a summer intern, provided invaluable assistance before he returned to the University of Oklahoma.

IPC Around the World

Honduras

In July, Victoria Simmons traveled to Tegucigalpa to conduct a 3-week IMPS workshop for the Proyecto Censo de Poblacion y Vivienda 2000 staff. The Population and Housing Census is scheduled for October 2000. Workshop participants included: **Jacobo Santos**, **Rafael Ramirez**, **Ericka Güity**, **Luis Fernando Ayestas**, **Gonzalo Madariaga**, **Engels Sanchez Navarro**, **Glenda Caceres**, **Luis Vargas**, **Carlos Romero**, **Jose Francisco Mejia**, **Will Castro**, **Sarai Arkouli**, **Juan Fernando Euceda**, and **Jose Carlos Rodriguez**.

India

In December, David Megill worked with **S.K. Sinha**, Deputy Registrar General, Sample Registration System at the Office of the Registrar General of India (ORGI) on the sample registration system and with **S.P. Sharma**, Consultant, in planning for the Post-Enumeration Survey to evaluate the coverage of the planned 2001 Census of India.

Jordan

In October, a team of five Census Bureau employees worked with many of the Department of Statistics (DOS) employees on the processing and analysis of the Jordan Annual Fertility Survey (JAFS) and installing the fifty computers that arrived. The team worked with: **Hussein Shakhathreh**, Director General of Statistics; **Fathi Nsour**, Director, Household Surveys Directorate (HSD); **Ikhlas Aranki**, Chief, Employment Division, HSD; **Mohammed Al-Assaf**, Chief, Demographic Surveys Division, HSD; **Batool Obeid**, Field Supervisor, HSD; **Hashem Qweider**, Director, Economic Surveys Directorate; **Osama Al-Zoubi**, Director, National Accounts and Industry Directorate (NAID); **Siham Gammoh**, Chief, National Accounts Section, NAID; **Zeinab El-Hasani**, Director of Data Processing; **Khamis Raddad**, Statistician, Agriculture and Environment Section; **Mohammed Al-Rifai**, Chief, Prices Division; **Issa Shafiq Halasa**, Computer Engineer; **Jamal Jamil Sa'ad Al-Deen**, Programmer/Analyst; **Mohammed Al-Alami**, Programmer; **Shamilla Murad**, Systems Analyst; **Amal Shehadeh**, Chief, Data Entry and Systems Analyst, Data Bank; **Alaa Ensheiwat**, Systems Analyst, Data Bank; **Wajdi Akeel**, Chief, Public Information Office; **Abed M. Awad**, Chief, Cartographic Section; and **Nimer Hashem Gharbia**, Statistician, Industrial Statistics Section, Economic Surveys Directorate.

Kenya

Armando Levinson and Elizabeth Weber went to Nairobi, Kenya, at the end of July to work on plans for a Post-Enumeration Survey (PES) to follow the 1999 Population and Housing Census. Levinson and Weber worked on the sample design and the procedures for the PES with **Jasper Mani**, Director of the Central Bureau of Statistics; **Dr. Kekovole**, Director of the Census Project; and **P.W. Nyongesa**, Chief of the Data Processing Department.

Malawi

Sherrell Goggin and Rebecca Sauer traveled to Malawi in September to establish a network/computer support contract with a local vendor, assist with the generation of the geographical lookup files, ensure correct implementation of the keying procedures, and perform general computer software/hardware troubleshooting. Sauer and Goggin also reviewed the quality of the overall census operations with **L.F. Golosi**, Commissioner

for Census and Statistics; **J. Ndawala**, Assistant Commissioner for Census and Statistics; **J. Kaphuka**, Statistician; **R. Chinula**, Statistician; **L. Mpando**, Statistician; **D. Mpicha**, Data Processing Section; **Mr. Nkhata**, Storage Room Supervisor; and **C.G. Zgambo**, Coding Room Supervisor.

Senegal

Rebecca Sauer traveled to Dakar in November to assist the Direction de la Prévision et de la Statistique (DPS) in the design of their field operation plans and materials. She worked with **Bakary Djiba**, Démographe, who is currently writing the enumerator's manual, and **Soukeynatou Fall-Kaba**, Démographe, on completing the draft questionnaire design. She also attended technical meetings called by **Moussa Faye**, Directeur; **Papa Demba Diouf**, Coordonateur du Recensement (Census Coordinator); **M'baye N'diaye** and **Mme Fatou Faye**, Cartographie; **Mamadou Mactar Gueye**, Chef du Bureau des Enquêtes Socio-Economiques auprès des Ménages; **N'Gagne Diakhate** and **Thiécouta N'diaye**, Bureau Informatique; **Cheikh Gueye**, Démographe; and **Djiby Diop**, Impression.

Virgin Islands

The Eastern Caribbean Center (ECC) is attempting to update the Consumer Price Index (CPI). Michael Stroot traveled to St. Thomas to assist **Dr. Frank Mills**, ECC Director, and his staff with final tabulations for the Consumer Expenditure Survey and other reports needed to revise the CPI. Stroot worked with **Carmen Rogers-Green** and **Annette Gumbs** most of the time, but they were somewhat distracted by the presence of Hurricane Lenny, which cast its windy spell for two days.

Zambia

Diana Lopez-Meisel and Victoria Simmons traveled to Lusaka to participate in a joint mission with Lynn Macdonald from the British Department for International Development (DFID). The trio's task was to assess local needs for planning and implementing the 2000 Population and Housing Census. The team had many productive meetings with members of the Central Statistical Office (CSO) including: **David Diangamo**, CSO Director; **Kumbudso Dzekedzeke**, Census Manager; and **Crispin Sapele**, Systems Development Manager.

VISITORS

CSPro software developers **Julio Ortúzar** and **Ruben Hume**, from Serpro, S.A. in Santiago, Chile, visited IPC in September. They worked with the IPC software developers to prepare the beta-test version of CSPro which was unveiled in the IMPS workshop. They attended the workshop to observe the reactions of the participants to the new software. Following the workshop, Ortuzar and Hume stayed on for further design meetings of the CSPro development team and to recruit new members for the Overseas ListServ Generation Association (OLGA).

Elizabeth Weber accompanied **Khamis Raddad**, Chief of the Environmental Statistics Division at Jordan's Department of Statistics (DOS) on a 2,000-miles-in-one-day trip to Jeffersonville Indiana. In Jeffersonville, Raddad toured the U.S. Census Bureau's National Processing Center, including the telephone-assisted survey facilities,

IPC Around the World (continued)

the quality control inspections on the Census 2000 Questionnaire printing, the map update digitizing operations, the map boundary update operations, the mail sorting operations designed for Census 2000, and the questionnaire scanning and manual data entry facilities designed for Census 2000.

In June, three staff from the Direction de la Prévision et de la Statistique (DPS) of Sénégal came to IPC to work on issues related to the planned Census of Population and Housing. **N'gagne Diakhate** and **Adama Fall-Toure** concentrated on data processing procedures, and **Soukeynatou Fall-Kaba** worked on subject-matter issues.

In November three staff members from the Ghana Statistical Service (GSS)—**K.B. Danso-Manu**, **Eric Okrah**, and **Abena Ani**—visited the IPC offices in Washington, DC, to work with IPC staff Selma Sawaya and Michael Levin in developing the specifications and programs to process the census data. The 2000 Housing and Population Census of Ghana is scheduled for March 26.

Also visiting during the summer were **Elena Frolova**, **Olga Mukhanova**, **Alexander Surinov**, and **Vera Gorbacheva**, of Russia's GOSKOMSTAT. They were accompanied by interpreter **Stella Gasoyan** as they reviewed U.S. economic statistics programs. They were particularly interested in data collection and data processing procedures, as well as in the definition of data requirements.

Other visitors included **Fathi Nsour**, **Ikhlas Aranki**, **Shamila Murad**, **Amal Shehadeh**, Jordan; **Jesse Aguon**, **Wilhelm Maui**, **Juan Borja**, **Paul Andrew**, **Justin Andrew**, CNMI; **S.P. Sharma**, **Pranab Ray**, **Chinmoy Chakravorty**, India; and **Veronica Pido**, Philippines.

1999 IPC Workshops

Many took advantage of the five summer workshops offered by IPC, as well as two workshops organized for specific groups. Friendships were established and participants benefitted from the exchange of ideas and experiences. It was difficult to say goodbye to each group, but each returned home better prepared to perform their assigned tasks. We have heard from many of them already with questions and comments. We certainly thank the sponsors of the participants who invested time and funding into our training program. The five Summer Workshops and their participants were:

Data Dissemination: **Emma Ala**, **Raul Ludovice**, Philippines; **Webster Chileshe**, **Crispin Sapele**, Zambia; **Nihaya Elayyan**, **Jamil Hamdan**, **Nayef Irteimeh**, **Yahia Musleh**, Jordan; **Marcelino Silva**, Mozambique.

Sampling and Statistical Methods: **Ghada Abd-Alla**, Egypt; **Nana Anjo**, **Stephen Adjei**, Ghana; **Shubhendu Sanyal**, **Hari Kishan**, India; **Camilo Amade**, **Valeriano Levene**, Mozambique; **Harivelo Rajemison**, **Edouard Razafimanantena**, Madagascar; **Sidy Gueye**, **Mamadou Gueye**, Senegal; **Hwida Al-Mansour**, **Abdelwadoud Matouk**, **Amer Al-Momany**, Jordan; **Tseren Purevdorj**, **Bayanchimeg Chilhaasuren**, **Ganzaya Luvsansambu**, **Auyrzana Luvsanjamts**, Mongolia; **Jigme**, **Yogesh Tamang**, Bhutan.

Analysis and Evaluation of Gender Statistics: **Funmilayo Ajetunmobi**, Nigeria; **Zeinab Al-Dabbagh**, **Awad Al-Sheboul**, **Manal Sweidan-George**, Jordan; **Minerva Esquivias**, **Marcelino Jorda**, Philippines; **Aubin Joseph Mani**, Cameroon; **Hamid Reza Namvar**, Iran.

Geographic Information System: **Haitham Abu-Menshar**, **Awad Al-Awadi**, **Saad Al-Khatib**, Jordan; **Cynthia Bondame**, **Aurora Reolalas**, Philippines; **Olugbile Dunni**, **Chike Moronu**, **Donald Charles Wokoma**, Nigeria; **Oyunbayar Gombojav**, Mongolia; **Emmanuel Hezron**, **Vincent Mugaya**, Tanzania; **Alexandre Marrupi**, Mozambique; **Kwadwo Tweneboa-Koduah**, **Philip Twumasi-Ankrah**, Ghana; **Twiggs Xiphu**, South Africa.

Integrated Microcomputer Processing System: **Firas Al-Fraihat**, Jordan; **Margaret Bauld**, Bahamas; **Tserenkhand Biderya**, Mongolia; **Trevor David**, Barbados; **Sabah Elmrini**, Morocco; **Francis Kupe**, **Esther Lavu**, Papua New Guinea; **Henry Mbene**, **Henry Onimole**, Nigeria; **Mohamed El-Moctar**, **Mohamed Saleh Ould Hamahoullah**, Mauritania; **Tusi Poleki**, American Samoa; **Judith Woodley**, Bermuda.

Two special workshops and their participants were:

Sampling and Statistical Methods Kryghyz Republic (Russian Language): **Sara Amanova**, **Chinarkul Abdrahmanova**, **Ermek Bazakeev**, **Chinarkul Tungatarova**, **Janybek Esengeldiev**, **Ainura Abdieva**, **Ravil Khanov**, **Galina Samohleb**, **Gulzeynep Mursabekova**, **Chinara Mambetova**, **Shamsia Ibragimova**, **Gulsara Sulaymanova**, **Gulmira Urzabakieva**, **Agyzbek Tumenbaev** (Interpreter), and **Ludmilla Richards** (U.S. Interpreter).

Statistical Enhancement Project: **Annette Gumbs**, Virgin Islands; **Brihmer Johnson**, Micronesia; **Anthony Loa**, American Samoa; **Jenkins Mariur**, **Shannon Oseked**, **Ayles Sukrad**, Palau; **Gil Suguitan**, Guam.

IMPS Workshop in Senegal

With many countries planning censuses of population and housing for the years 2000/2001, the Dakar-based Country Support Team (CST) of the United Nations Population Fund (UNFPA), which supports statistical activities primarily in West Africa, has been very active indeed. The CST has recommended the use of IMPS for census data processing, and to maximize the effect of its training efforts, the UNFPA/CST hosted a 4-week IMPS workshop in September 1999. Workshop invitations were sent to the statistical offices in all non-anglophone countries in continental Africa, as well as to the nearby island nations (Comoros, Madagascar, Cape Verde, etc.). The workshop focused on the processing of census information, but other topics of interest to statistical offices were also covered.

Another objective of the workshop, of almost equal importance, was to establish relationships among the staff of the various statistical offices. As UNFPA withdraws support for the CST (funding is expected to expire by the end of 2001), outside technical support for statistical projects will become scarce or even nonexistent, so it is important that staffs of national statistical offices be able to turn to counterparts in the region for assistance.

Principal instructors for the workshop were Selma Sawaya (IPC) and Robert de Clercq (UNFPA/CST data processing advisor). They were ably assisted by André Mayouya (UNFPA/CST advisor in survey and sampling methods) and Michael Levin (IPC specialist in data editing and tabulation). The participation of **Ibrahima Sarr**, **Adama Touré Fall**, and **Ngagne Diakhaté** from the Sénégal statistical office as

IPC Around the World (continued)

"resource persons" was of critical importance to the success of the operation. They generously shared their collective knowledge and experience with the participants, and aided the instructors immensely during the practical exercises. With so many participants, it would have been impossible for the instructors to give adequate attention to each participant without the assistance of their Sénégalaise colleagues. Everyone connected with the workshop thought it was an extremely valuable and productive experience.

Graduates of the workshop include: **Mbiki Zatando, Nkikavuanga Nkosi**, Angola; **Grégoire Kpekpede, Euzerbe Yolande Gomez, André Akpo, Bruno Djagba**, Bénin; **Christophe Dos Santos, Emmanuel Couturier**, Cape Verde; **Mamadou Boina Maecha, Mohamed Msaidie, Monaward Ahmed Mshangama**, Comoros; **Nicolas Samba-Louzolo, Frédéric Nkeoua**, Congo; **Albert Kouame Kouassi**, Côte d'Ivoire; **Mohamed Youssouf Arrete, Ramzi Fouad Salem**, Djibouti; **François Ngopya**, Zimbabwe; **Hyacinthe Obiang Minko, Jean-Pierre Zimammefe**, Gabon; **Karamoko Diarra, Fodé Diarra**, Mali; **Mohamed ould Nekheteriou, Mohamed Abdallahi ould Boukhary, Silly Eleyatt**, Mauritania; **Dieudonné Mugabushaka, M. Ananias Gichondo**, Rwanda; **Soukeynatou Fall Kaba, Issa Ndiaye, Bakary Djiba, Papa Thiécouta Ndiaye, Ibra Diome, Mbaye Ndiaye**, Sénégal; **Helder Salvaterra, Mário A. R. Coelho**, São Tomé & Príncipe; **Nodjimbatem Joel Ngoniri, Nodjimadji Kostelngar, Oroumbaye Naryanan**, Chad; **Djadou Ayowo Zoglo**, Togo.

2000 Workshops Announced

Analysis and Evaluation of Gender Statistics 8 - 26 May 2000 (three weeks)

As the data from the 2000 round of censuses become available, there will be more demand for quality data and reporting on gender issues that will become increasingly important as we move into the 21st century. This is a workshop on how to understand, analyze, and evaluate data reported by gender. The goal of the workshop is to increase the participant's awareness of the importance of gender issues while improving their ability to evaluate the quality and relevance of sex-disaggregated data. Many of the skills learned in the workshop are not specific to gender issues. The information learned in this workshop will greatly enhance the overall quality of work in the statistical office.

Sampling and Statistical Methods 30 May - 23 June 2000 (four weeks)

This is an applications-oriented course on sample design and estimation procedures for surveys and basic statistical methods relevant to a statistical organization. The course includes sample design case studies and practical applications. Participants will gain hands-on experience using the microcomputer package CENVAR for calculating measures of precision for survey estimates from complex sample designs.

Subnational Population Projections for Planning Purposes 26 June - 21 July 2000 (four weeks)

Provincial-level governments need accurate population figures to plan for the future needs of their provinces. Statistical offices can provide these figures using the data that have been collected in censuses and surveys, as well as data from administrative statistics often collected by other agencies. The U.S. Census Bureau has produced subnational-level

population projections for various countries over the last 20 years, and this experience will be used to train participants. The workshop will cover the evaluation, analysis, and production of reasonable demographic indicators for subnational areas. The workshop will also emphasize ways in which these indicators can then be used to produce projected demographic indicators as input into PAS, the microcomputer projection program developed at the U.S. Census Bureau.

Geographic Information Systems (GIS) 24 July - 1 September (six weeks)

Geography, cartography, and data are integrated in a Geographic Information System (GIS). This is an excellent analytic tool involving all the information that has been gathered at a geographic level. This course will demonstrate the many ways that geography and cartography are part of the collection, tabulation, and dissemination of statistical information. Topics will focus on the requirements and basic analytic techniques, with an overview of the management and technical issues associated with a GIS.

Census and Survey Processing (CSPPro) 5 September - 29 September 2000 (four weeks)

This course will feature the new Windows-based CSPPro software, which merges the best features of IMPS and ISSA modules for data capture, tabulation, and mapping. Relevant modules of IMPS 3.1 will be included to permit users to accomplish those processing tasks which are not yet integrated into the new software. The course will stress the importance of designing the total processing system and integrating quality control into each phase.

Building an Integrated Data Dissemination System 2 October - 20 October 2000 (three weeks)

This course will concentrate on the methods which can be used by managers of statistical organizations to meet the demands of data users for improved statistical products and services, including the use of "user-friendly" software to produce statistical products on CD-ROM and floppy disks. Participants will learn, through hands-on exercises, the principles of effective graphic and publication design for reports, tables, newsletters, brochures, and presentation materials. The course will also show how to establish an Internet "Home Page." This will include equipment and organizational infrastructure requirements for Internet connections, effective Home Page design, "html" language, and setting up interactive user/customer features.

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If you have access to the World Wide Web, visit our site at:

<http://www.census.gov/ipc/www/imps.html>

Click on "Workshops" and you will see the course information and an application which you can complete and submit online.

Reader's Corner

IMPS in Vietnam

Dear *DataLine*,

You may be interested to know that we successfully used IMPS to analyze three small surveys in Vietnam. This was an ADB-financed labor market information system for the Ministry of Labor in Vietnam. From start to finish, including analysis, took three months. Of course we would very much like the DOS part to be included in a Windows frame and would be pleased to know when this would be available. It would also be useful to be able to do simple stats (mean, mode, variance) from the tables in IMPS instead of having to input the information into a spreadsheet. What plans have you for this? Is CENVAR to be made 'Windows-friendly'? Anyway, many thanks for making your survey package available; we enjoyed using it very much.

Michael Hopkins, Viet Nam

Dear Michael,

Thank you for the kind words. We think that there is nothing better than IMPS when it comes to processing a survey or census. We are working hard on our Windows version, but it is a difficult task. We want to provide the excellent product which our users expect. We are currently working on Data Entry, but a Windows-based CENVAR is definitely in our conversion plans. We also plan to enhance CrossTab to do some of the more basic statistics, as you suggest. Finally, we have always tried to respond to our users' needs—sometimes it just takes a while!

Data Sort problem

Dear *DataLine*,

I finally broke down and bought myself a new laptop, a Dell Latitude 266XT running Windows 98. After I loaded IMPS 4.1 using the May 1999 version of IMPS41.EXE, I noticed a problem with Data Sort. If you start Data Sort from the IMPS task bar but then close without doing anything (simply start the program, then exit using the "X" close button), an error message about an illegal operation appears. If you open and then close using the FILE menu EXIT option, the same thing happens. The error message was:

DATASORT caused an invalid page fault in module DATASORT.EXE at 015f:004013f0.

The system then displays the contents of registers and a stack dump; two of the registers have different contents at each attempt to execute, but the others remain the same. The same problem occurs under Windows 95. I loaded IMPS using IMPS41.EXE to a laptop in our office and got the same type of error message. In this case, the error message was:

DATASORT caused an invalid page fault in module KERNEL32.DLL at 0137:bff9a5d0.

The system displays only register contents but no stack dump. The contents of one register change at each attempt to execute, but the others remain the same. None of the other IMPS modules has this problem. It doesn't seem to affect anything; it just takes you by surprise.

Calvin A. Saruwatari, Guam

P.S On your Library pick-a-country web page, the "Submit Query" button should probably be on the right of the country list, since double clicking on

the name doesn't do anything. I couldn't figure out why nothing happened when I clicked on Guam. I finally noticed that the up/down scroll bar was active, and I moved down the page and found the "Submit" button.

Dear Calvin,

Thanks for your problem report. We were able to re-create and fix the Data Sort problem. The fix will be included in the next release of IMPS 4.1. Also, your comment on the Library Web page has been passed on to the persons who maintain that page.

Identification of verified files in CENTRY

Dear *DataLine*,

I am using IMPS 3.1 for data entry for a clinical trial. EPI-Info was used in the field for the first round of data entry. However, due to the complex nature of the questionnaire, EPI-Info was not viewed as the ideal program for the verification. I wrote a SAS program which converted the data to conform with an IMPS data entry dictionary and application and we are using CENTRY for the verification entry. I am very impressed with CENTRY. It was easy to set-up and has been trouble-free in use.

I do have some questions concerning ways of identifying whether all the data have been double-entered. Right now I am going into MODIFY and looking through the records one by one to see if they are verified, or using VERIFY and the Control-PageDown combination to search for the next unverified record. Is there an easier way to do this? I know the BOP file stores the information on whether a record has been verified or not. However, I don't know how to access this information. Any recommendations?

Dr. William MacLeod, USA

Dear Dr. MacLeod:

Thank you for your interest in IMPS, and CENTRY. It sounds as if you've done very well on your own with the system already! You will easily know when ALL questionnaires in the batch (.bch data file) have been verified (double-entered), because when you choose "Verify" from the main menu, you will get a message to this effect. Another way is to choose "Stats" from the main menu. At the top you will see "Total questionnaires", "Total records", "Verified questionnaires" and "Verified records". Obviously, the questionnaires are all verified when these numbers match.*

What if some are verified and some are not? You can see how many are verified by looking at Stats. You can find which ones are not verified by the method you described. Bear in mind that verification is record-based, not questionnaire-based. This means that if a questionnaire contains 3 records, it is possible that only one or two records are verified. The questionnaire itself, in this example, will be considered "verified" only when ALL its records (in this case, three) have been verified.

You are correct that the .bop file contains the verification status. It is in binary format but if you want to get fancy, you can write a program to look at the .bop file. We can send the specification for the format of the .bop file, if you'd like. It's also in the CENTRY User's Guide, which you can download from our Internet site. Good luck and keep up the good work!

Reader's Corner (continued)

IMPS for DOS

Dear *DataLine*,

I would like to develop a census form to be used in a personal data device that uses DOS 3.21. This device has a screen size of only 16 lines and 21 columns per line. Please advise if the DOS version of IMPS can generate an **.exe** program to present the census form on this device with limited screen size.

Ricardo Ng, Panama

Dear Ricardo,

The DOS version of IMPS (IMPS 3.1) is designed for an 80-by-25-line screen. There are NO parameters within the Data Entry module to change the screen size. The Data Entry module does not generate an **.exe** program; rather, it produces a specification file which is interpreted by a fixed **.exe** program. If you are interested in trying IMPS for DOS, download IMPS 4.1, which contains the DOS version, IMPS 3.1, from our Internet site:

www.census.gov/ipc/www/imps.html

Cross Tabulation (and other) Suggestions

Dear *DataLine*,

I have some suggestions regarding the CrossTab module:

(1) CrossTab should have an option in the menu for the user to choose the working directory where the system would store the temporary output files. Currently, the system uses **c:\windows\temp**; this directory can become a bit crowded, since most software programs store their temporary files there. I wanted CrossTab to use my D: drive but could not make the change. (Look at the WINZIP software for an example of this kind of option.) The **c:\windows\temp** folder could be the default directory if the user did not want to change it dynamically.

(2) CrossTab should have an option for the user to change the name of the dictionary related to an **.xts** [tabulation specifications] file. Currently, the **.xts** file must be manually edited. For example, I had several **.xts** files linked to one **.ddw**, which I needed to modify slightly. I did not want to change the original dictionary (it is used in other procedures) so I created another **.ddw** for CrossTabs. I had to manually change the **.xts** files to work with the new dictionary.

(3) With regard to the data dictionary module, the "compress empty spaces" function [**Edit, Block** option] is very handy, but you should allow it to work also between the common items and the records (as it is now, it works only inside a single record).

(4) Regarding the Data Sort module, I am not sure whether it is an error or a problem with my Windows 98. I have a D: disk with 13 Gb, with 8 Gb of free space. When I tried to sort a file of 1.4 Gb to the same disk using the temp file also on the same disk, it said I had not enough space. I changed the output file to my C: disk (which had only 2 Gb of free space) and it worked. I wonder if you are reading the empty space in a long variable instead of a double (or a float), or something of the sort. Has anybody else mentioned this kind of problem? By the way, the Help information does not tell the user the minimum space required to handle a sort (Is it twice the size of the input file?).

Ari Silva, Brasil

Dear Ari,

Thanks for your comments. Both your suggestions regarding CrossTab are interesting. We will look into implementing them for the CSPro system.

In regard to compressing empty space, we are trying a new method for CSPro. Previously, we encountered two problems with the IMPS Windows Data Dictionary. First, the movement of items from place to place in the data dictionary gave unexpected results. Second, it was difficult to tell people what to expect when 'compressing' the data record. In our new system, the dictionary uses one of two modes of operation: either absolute position or relative position.

In the ABSOLUTE mode, items DO NOT automatically change position. You cannot place an item in a given position and expect other items to move down. You can only place new items in record positions not currently occupied by other items. If you want to insert an item, you must rearrange the existing items to produce enough space for the item you want to move or create. You can place items in any specific arrangement you want. In the RELATIVE mode, no gaps can ever occur. Items are always arranged in the following general order: Record Type, followed by Identification [Common] item(s), followed by record items. If you add an ID item, it will be placed at the end of the existing ID items, and everything will be pushed down. If you set the start position of an item at position 20, it will be moved to that relative position and other items will be adjusted to fill in any gaps.

The basic idea is that if you are creating a Data Dictionary for a new file, use the RELATIVE mode so you can easily move items around and fill in the gaps. If you are creating a Data Dictionary for an existing file, you would use the ABSOLUTE mode because all the positions are already determined and under the user's control. We'd like to hear your reactions to this.

Your comments about Data Sort are interesting. We need to work on handling both large disks (>2 Gb) and large files. Unfortunately, at the moment, files cannot be larger than 2 Gb because the file pointers in C++ are long integers. C++ does have **_int64** (64 bit integers) variables for calculations, so we can solve the disk size calculation problem. As for the minimum space necessary for the sort, we need to do some detailed checking, but 2 times the input file size is the best rule of thumb because it is the worst-case condition. We will update Help screens with that information.

Thanks very much for your comments and ideas. They are very useful.

IMPS Map Viewer

Dear *DataLine*,

It was very interesting to access your WebMap by Map Viewer. If we want to use the IMPS Map Viewer as a data dissemination tool for upcoming Indonesian 2000 Census of Population and Housing, what must we do? Have you any reference manual for it? How do we order this software if we must purchase it? Please give me the complete information about IMPS 4.1 Map Viewer, etc. Thanks for your assistance.

Dudy Sulaiman, Indonesia

Reader's Corner (continued)

Dear Mr. Sulaiman,

Thank you for your interest in Map Viewer and WebMap. MapViewer is a module of IMPS 4.1 which runs under Windows 95/98/NT and is free to you. You can find more information about Map Viewer, and download the software from our Internet site:

www.census.gov/ipc/www/imps.html

WebMap is a Web-based version of MapViewer which runs under Windows NT Server (version 4.0 or above) and requires the Microsoft Internet Information Server (IIS, version 2.0 or above; IIS is actually included with Windows NT Server.) WebMap is currently a beta test version but it has been used successfully on a number of servers. WebMap uses the same map and data files as MapView, plus it can also be provided at no cost.

The recommended approach is to develop your thematic mapping data dissemination products using MapViewer, then install WebMap and transfer the appropriate files to your Web server. There are two kinds of files which MapViewer and WebMap use:

1. *IMPS map file*
2. *IMPS map data file*

The map file contains coordinates for all the polygons in the map along with the geographic codes which correspond to the geographic units. You need only create this file once. Although the file format is specific to IMPS, it can easily be created from ArcView shape files. If you have the geography of Indonesia already in electronic format, we can assist you in converting it to the IMPS format. If these files do not yet exist, then we may be able to get something from the Internet, convert it to IMPS, and send it to you for review. The map data file can easily be created using a spreadsheet program. Both these file formats are documented in the on-line Help which comes with MapViewer. This is what we suggest

1. *Download IMPS 4.1 and install it.*
2. *Study the on-line helps in MapViewer to examine the file formats in more detail. Use the Popstan files that come with the installation as an example.*
3. *Create an IMPS map file for Indonesia.*
4. *Create some map data files, so you learn how to do this.*
5. *Next, if still interested, we will send you the files you need to install the Web version on your NT server, along with installation instructions. You can then move the files you've created onto your server and try it out!*

If you succeed in this, you will join the United States, Mozambique, the Philippines and Brasil as countries (that we know of) whose statistical offices are using this product for data dissemination. Again, we will assist you as much as we can. Good luck!

Data Entry Issues

Dear DataLine,

We encountered some problems with our CENTRY application. First, we want to use an item value (number of persons) in record type 1 to automatically control the number of type 2 records to be keyed. Second, one of the fields seems to be "pre-keyed," because the record number is

automatically displayed before any information has been entered by the operator. What is happening?

Vangy Bowleg, Nassau Bahamas

Dear Vangy,

Your CENTRY data entry program is working correctly. Unfortunately, CENTRY cannot enter a predetermined but variable number of records. In your example you should:

*Enter Migration record # 1 (if appropriate); when it is complete Migration record #2 will appear automatically. Enter Migration record #2 (if appropriate); when it is complete Migration record #3 will appear automatically, etc. When all Migration records have been entered, use the **Tab** key to switch from Migration records to Person records. [Even though another Migration record appears on the screen at this point, it will not be saved unless it actually contains data.] Train your keyers to use the **Tab** key to go to the next record type when they complete the Migration records for a household.*

*In terms of sequencing certain fields, the CENTRY developer allows you to specify that one or more fields will automatically be sequenced. If you are in "Develop Application" mode, move the cursor into the field which is displaying the number and you will see the options box pop up. **F10 Sequence** will be **Yes**. This is how the numbers appear "automatically." If you move the cursor to another field (which does not display sequence information), you will see that **F10** will be **No**, meaning "do NOT automatically insert a sequence number." The **F10** key is a toggle; to change from one status to the other simply press the key.*

You might also want to use the Option to "Bypass sequence items." This option will cause the cursor to skip over a sequenced item so the keyer does not have to worry about it. In CENTRY developer, select 'Options' from the menu at the top. Select 'Bypass sequence items,' press 'Enter,' and then select 'Yes.' Save the application (.AP). We think you will like this CENTRY feature.*

Validating Geocodes during data entry

Dear DataLine,

In CENTRY, I need to check a value being entered vis-à-vis another value in a check file. For example:

State		town council
01		001
	002	
	003	
02		001
	002	
	003	
	004	
03		001
	002	
	003	
04		001
	002	
.	015	

Reader's Corner (continued)

If a questionnaire has state = 01 and town council = 010, it would be a mistake. Can the system check these codes during data entry and tell me when something is wrong?

Raymundo M. Sanchez Burgos, Mexico

Dear Raymundo,

To our knowledge, the only way to validate combinations of codes is:

(1) Use an ID check file, IF the codes are batch ID or questionnaire ID. For example: If you have many questionnaires and they are grouped/batched by state and town council, then you could make this your Batch ID (put them on your Batch screen) These values DO NOT CHANGE for any questionnaire in the batch. To choose the ID checking option: in CENTRY Developer, use the options menu and select "ID Checking," then select "Check BATCH IDs only." You will then need an ID check file with all the valid combinations of State and Town Council codes:

01001
01002
01003
etc.

[For more information about ID check file, see the CENTRY manual.]

When initiating data entry with the CENTRY application, the name of the ID check file will be the third parameter on the screen. When the operator begins a batch, the state and town council codes will automatically be checked against the values in the specified check file. Duplicates and/or codes NOT on the list can NOT be keyed.

(2) If State and Town Council can not be your Batch ID (or Questionnaire ID), then you need to use a CONCOR program with a LOOKUP-FILE (see CONCOR manual). The CONCOR program would be something like (assume STATE is state code and TOWN is town council code):

Lookup-file

Item LSTATE N 2 1

Item LTOWN N 3 3

Control

Questionnaire id,... [same as you use in CENTRY]

For-new-quest

Match (STATE TOWN)

(LSTATE LTOWN) . see if codes are in file

If MFLAG = "N" . no match

msg "Invalid combination of State & Town codes"

. message in Spanish, of course

STATE TOWN

End-if

Compile the CONCOR program and use it as the fourth parameter in the CENTRY execution menu. The look up file (valid state and town council code combinations) would be the fifth parameter. During data entry, the error message indicating 'invalid combination' will not be displayed until the F7 key is pressed to accept the questionnaire. We hope that you can use one of these options. Let us know if you need more information.

User-Defined File from CONCOR or CENTS

Dear DataLine,

Is it possible to generate an output file (*.prn) with only some of the variables in a database created with IMPS? Suppose I have a questionnaire with 100 variables whose values are already loaded in my IMPS-created data file. If I want to select, for example, 20 of those variables and analyze them separately with another software package, can I create an output file in a '.prn' format (or '.txt', or whatever) with only those 20 variables?

Thanks in advance for your attention.

Angelo Zago, Italy

Dear Angelo,

First: IMPS is NOT, strictly speaking, a database. IMPS data files are ASCII text files which can be accessed via an IMPS data dictionary. This may not seem like an important distinction, but it is when it comes to using the files with other software packages.

Second: To process only selected variables, you will need to create an extract file. This can be done in CONCOR or CENTS using the 'WRITE' statement. See:

CONCOR User's Guide, page 77

CENTS User's Guide, page 145

We suggest that you create a CONCOR program similar to this:

Control

Questionnaire QUEST-ID . your normal questionnaire ID

Reports Summary

For-each (XX-RECORD)

Write _____

. list of variables/items to be written

Message "Record Written"

The above program writes one record/line for each record. IF you want some selection, use the following:

If _____

. example: SEX = 2 and AGE >= 15

Write _____

. list of variables/items to be written

Message "Record Written"

End-if

That is the theory. Depending on exactly what you are trying to do, the implementation may be a little more complicated. Buona Fortuna!

DOS IMPS

Dear DataLine,

We use IMPS 3.11 as well as IMPS 4.1 for our regular surveys in a networked environment and we have had no problems until now. Our server crashed and we had to restore all our data from backups. We also split one of our server volumes into two virtual drives, and the files which used to reside on the F: drive now are on the G: drive. Some

Reader's Corner (continued)

software, including IMPS, has given us trouble because of the new path. When we try to compile and run some of our CONCOR programs, we keep getting a "File not found" error. We know that some files need to be modified to use the new G: drive path, but we are not sure which files to modify. Should we just re-install IMPS?

Danny Tun, Belize

Dear Danny,

The problem may be in the IMPS.SYS file in the IMPS31 folder/directory. This ASCII text file contains pointers to all modules used by IMPS. Look at this file with a text editor, and check to see if the drive/path combinations specified for the IMPS components are correct. If not, correct them. If they are correct, and IMPS is still not working correctly, try re-installing the software, paying close attention to the drive specification during installation. If re-installation still does not solve the problem, let us know.

IMPS under Windows NT

Dear DataLine,

Does the newest version of IMPS (4.1) on your web site (Internet site) which we download also work under Win NT4.0? We kindly would like to receive some information as soon as possible from you.

Central Bureau of Statistics, Aruba

Dear CBS,

The complete answer to running IMPS under Windows NT:

*1) Windows-based modules (Data Dictionary, MapViewer, Cross Tabulation, etc.) work fine.
2) DOS-based modules (IMPS 3.1) work fine using the IMPS 3.1 menus. The DOS 'box' in Windows NT needs some size adjustment. There is no 'full screen' option available. If you set up BATs to automate some activities (such as data entry) there does not seem to be any way to 'pass' parameters through a shortcut icon on the desk top. Of course, these BATs can still run from the DOS prompt. Basically, the problems encountered using IMPS 3.1 are the same that are encountered for any DOS-based software. Windows NT is not kind to this "old" technology. We hope this helps.*

Multiple Files for Cross Tab

Dear DataLine,

We use IMPS 4.1, especially Cross Tab, in the Statistical Center. We want to tabulate multiple files which are not in the same directory, i.e., they are located in different directories and even different drives. How can I do this? Thank you.

Mahshid Einolyaghin, Iran

Dear Mahshid,

We are pleased that you find IMPS so useful. In order to tabulate files which are not in the same directory you can set up 'shortcuts' to each data file in one directory. In your directory, create new shortcuts 'pointing' to each data file to be tabulated. (Select 'File,' then 'New,' then 'Shortcut.' Use 'Browse' option and select 'All Files' since the default is 'Programs' which shows only .EXEs. Give each shortcut a unique name.)

When you run Cross Tab select the shortcuts which you have created. The system will ask you to choose whether you want one tabulation for all data files, or separate tabulations for each data file. Select the first option. [Special Note: This option became available in versions of the software dated September 17, 1999. If you do not have the latest version of the IMPS software, you can download it from our web site:

<http://www.census.gov/ipc/www/imps.html>]

Unique in Mozambique?

The Instituto Nacional de Estatística (INE) in Mozambique is successfully using **IMPS Map Viewer** to help with dissemination of results from the 1997 Population and Housing Census. Census products include a CD-ROM with all the publications in HTML (Internet) format and a Map Viewer application. This CD is one of the most requested items from the INE. Workers on the project included IPC staff member Christopher Corlett and his INE counterparts, **Tomás Bernardo, Salomão Muianga, and Eugénio Matavel.**

The Map Viewer application has several useful data elements, including information on population distributions, languages, religions, education, and basic housing characteristics (water, electricity, sanitation). INE also included socio-demographic indicators, such as infant mortality, life expectancy, and yearly population projections (at district level) from 1999 to 2010. The entire Map Viewer application is available on-line at INE's web site (www.ine.gov.mz) or IPC's mirror site (www.ipccensus.org/mozambique).

IPC Reorganization

The International Assistance (IA) area of IPC recently underwent a modest organizational restructuring. The IA area is now three branches: Methodology & Software Development (the folks who help to bring you the IMPS and CSPro software); Training & Technical Assistance (folks whom you may have met if they came to your organization on a technical assistance mission, or if you attended a training session at IPC), and the International Projects Staff (those Census Bureau employees who are posted outside the United States for a longer period of time). The Methodology & Software Development staff are now led by Glenn Ferri, a computer software specialist who has been with IPC for more than a decade, working in software development for most of that time. Training and Technical Assistance activities will be coordinated by Diana Lopez-Meisel, survey statistician and subject-matter specialist, who has been with IPC for over 20 years. David McGill, a mathematical statistician who has worked in many countries around the world, heads the International Projects Staff. All three branches are coordinated by Robert D. Bush, who also has been in IPC for more than 20 years. We wish the new supervisors all success!

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